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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,729	02/09/2004	Bruce A. Cincotta	177-00022	9202
26753	7590	06/07/2005	EXAMINER	
ANDRUS, SCEALES, STARKE & SAWALL, LLP 100 EAST WISCONSIN AVENUE, SUITE 1100 MILWAUKEE, WI 53202			BUSHEY, CHARLES S	
			ART UNIT	PAPER NUMBER

1724

DATE MAILED: 06/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/774,729	Applicant(s) CINCOTTA ET AL.	
	Examiner Scott Bushey	Art Unit 1724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 11-21 is/are rejected.
- 7) ☒ Claim(s) 10 and 22 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>6-1-04</u> . | 6) <input type="checkbox"/> Other: ____. |

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DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cincotta et al '025 taken together with Smith et al.

Cincotta et al '025, which corresponds to the admitted prior art of Figures 1-6B of the instant application, substantially disclose applicant's invention as recited by instant claims 1-9, except for the o-ring seals between the steam plug cover and the diffuser tube, the open slots in the plug cover occupying less than $\frac{1}{4}$ of the circumference of the plug cover and the deflector being removable from the heater body. Initially, it should be noted that anything is removable given the proper tool and a desire to remove a

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given element. Further, it is noted that the reference discloses that the open slots in the plug cover occupy "substantially" $\frac{1}{4}$ or 90 degrees of the circumference thereof. The term substantially is considered to broaden the disclosure of the reference to a sufficient degree to encompass an open slot width of slightly less than $\frac{1}{4}$ or 90 degrees of the circumference of the plug cover.

Smith et al (Fig. 1; col. 2, lines 48-60) disclose a diffuser tube and plug cover combination, wherein o-ring seal means (10) are provided within recessed slots to seal the area around passages within the concentric tube structures, thereby disallowing leakage between the tubes. It would have been obvious for an artisan at the time of the invention, to modify the diffuser tube and plug cover construction of Cincotta et al '025, to include o-ring seals therebetween, in view of Smith et al, since such would reduce the cost of manufacture of the device by allowing the plug cover outer wall to have a diameter that would not have to match the inner diameter of the diffuser tube to such tight tolerances to preclude leakage without the o-ring seals. Furthermore, it would have been obvious for an artisan at the time of the invention, to construct the deflector of the primary reference to be removable, since such would facilitate convenient means for performing maintenance on the device. Lastly, while the primary reference is considered to render obvious the open slots of the plug cover being less than $\frac{1}{4}$ or 90 degrees of the circumference thereof, in view of the above discussion, it would have been obvious for an artisan to provide openings of lesser area, in view of Smith et al, which teaches the use of many small openings within the diffuser tube, which would allow for a finer degree of steam pressure control across the diffuser tube.

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4. Claims 15, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cincotta et al '025 taken together with Suzuki et al.

Cincotta et al '025, which corresponds to the admitted prior art of Figures 1-6B of the instant application, substantially disclose applicant's invention as recited by instant claims 15, and 16, except for the diffuser tube and the deflector plate having a wear resistant coating applied thereto.

Suzuki et al (col. 10, line 20 through col. 11, line 37) disclose providing components within a pressurized steam environment, which are susceptible to erosion by water droplets, corrosive components or solid particles within the steam flow, with an erosion resistant coating, such as a tungsten carbide coating. It would have been obvious for an artisan at the time of the invention, to modify the deflector and diffuser tube structures of the primary reference, to include a tungsten carbide coating in view of Suzuki et al, since such would prevent the aging wear-out of the internal components of the device, thereby increasing the useful life of the device.

5. Claims 11-14, and 17-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cincotta et al '025 taken together with Smith et al and Suzuki et al

Cincotta et al '025, which corresponds to the admitted prior art of Figures 1-6B of the instant application, substantially disclose applicant's invention as recited by instant claims 11-14, and 17-21, except for the o-ring seals between the steam plug cover and the diffuser tube, the open slots in the plug cover occupying less than $\frac{1}{4}$ of the circumference of the plug cover, and the diffuser tube and the deflector plate having a wear resistant coating applied thereto.

Smith et al (Fig. 1; col. 2, lines 48-60) disclose a diffuser tube and plug cover combination, wherein o-ring seal means (10) are provided within recessed slots to seal the area around passages within the concentric tube structures, thereby disallowing leakage between the tubes. It would have been obvious for an artisan at the time of the invention, to modify the diffuser tube and plug cover construction of Cincotta et al '025, to include o-ring seals therebetween, in view of Smith et al, since such would reduce the cost of manufacture of the device by allowing the plug cover outer wall to have a diameter that would not have to match the inner diameter of the diffuser tube to such tight tolerances to preclude leakage without the o-ring seals. Further, while the primary reference is considered to render obvious the open slots of the plug cover being less than $\frac{1}{4}$ or 90 degrees of the circumference thereof, in view of the above discussion, it would have been obvious for an artisan to provide openings of lesser area, in view of Smith et al, which teaches the use of many small openings within the diffuser tube, which would allow for a finer degree of steam pressure control across the diffuser tube.

Suzuki et al (col. 10, line 20 through col. 11, line 37) disclose providing components within a pressurized steam environment, which are susceptible to erosion by water droplets, corrosive components or solid particles within the steam flow, with an erosion resistant coating, such as a tungsten carbide coating. It would have been obvious for an artisan at the time of the invention, to modify the deflector and diffuser tube structures of the primary reference, to include a tungsten carbide coating, in view of Suzuki et al, since such would prevent the aging wear-out of the internal components of the device, thereby increasing the useful life of the device.

Allowable Subject Matter

6. Claims 10 and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Applicant should note the suggestion of Janovtchik (28,29 in Fig. 2; col. 2, lines 40-47) or Lecoffre et al (JE,JF in Fig. 2) that o-rings be provided to seal steam diffusers or concentric tubes, respectively. Further, Kramer (col. 8, lines 29-34; col. 9, lines 29-31; col. 21, lines 8-24) suggests providing a tungsten carbide coating to apparatus elements within an erosive environment.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Bushey whose telephone number is 571 272-1153. The examiner can normally be reached on M-Th 6:30-5:00.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Scott Bushey
Primary Examiner
Art Unit 1724

csb
6-2-05



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